

U.S. Geological Survey Research in the Arctic OCS

Monitoring marine birds of concern in the Eastern Chukchi Nearshore Area (with MMS)

Delineation of populations and migratory pathways of yellow-billed loons

Diet composition of sympatrically nesting red-throated and Pacific loons inferred from stable isotopes and fatty acids

Post-natal growth and energetics of red-throated loon chicks

Polar bear survival in a vanishing sea ice environment

Assessing the accuracy and narrowing the uncertainty in population projections for Southern Beaufort Sea polar bears

Population structure of Pacific walrus

Pacific walrus selection of benthic prey in the St. Lawrence Island polynya (outside of the OCS but informative to the OCS in the Chukchi Sea)

Potential influences of climate change and other stressors on Pacific walrus through the 21st century

A coupled population dynamics and bioenergetics model for the Pacific walrus

Pacific walrus movements and foraging behavior in the Chukchi Sea during the ice and ice-free seasons

Enhancing forecasts of polar bear and Pacific walrus population responses to a rapidly changing Arctic environment (FY2010 Initiative - Changing Arctic Ecosystems) including:

- Ramifications of increased use of land by polar bears in Alaska
- Modeling Pacific walrus population dynamics and bio-energetics
- Demographic parameters of walruses estimated from onshore aggregations
- Demographic parameters of walruses estimated from stable isotopes in archived teeth
- Sea-ice habitats - mapping and quantifying change with satellite data and IPCC AR5 models
- Habitat models for polar bears in the Seasonal and Archipelago ecoregions
- Energetics and behavioral responses of polar bears to changes in sea ice and food availability
- Modeling walrus habitat associations and foraging energetic

Testing molecular and otolith tools to investigate populations-of-origin and migration in Arctic cisco found in the Colville River, Alaska (with MMS) Increases in the rates of coastal erosion and its influence on the loss of coastal features in Arctic Alaska

Coastal Hazards Study – Sea level rise, chronic erosion, and storm-surge modeling (Pilot project- Kaktovik)

Vulnerability of North Slope community water supply lakes to coastal erosion, storm surge flooding and sea-level rise

Extended continental shelf mapping initiative – Law of the Sea (with NOAA)

Framework geology studies that span the onshore/offshore boundary - studies of the geology and hydrocarbon accumulations both onshore and offshore

Minerals Management Service Research in Arctic OCS

Technology Assessment and Research:

Research to detect and map crude oil in and under ice.

Additional physical and chemical analysis of arctic oils.

Improve mechanical containment and skimming equipment and techniques to clean up spilled oil in ice infested waters.

Effective use of dispersants and chemical herders in broken ice conditions.

Evaluate metrological and oceanic trends to identify safe time windows to transport and set platforms. Establish the abilities and limitations of the equipment used to transport these platforms and support their operations. Identify weaknesses in personal safety equipment for use in cold, offshore environments.

Environmental Studies: Ongoing

Populations and Sources of Recruitment in Polar Bears (Beaufort Chukchi)

Bowhead Whale Feeding Variability in the Western Beaufort Sea: Feeding Observations and Oceanographic Measurements and Analyses (Beaufort)

Mapping Sea Ice Overflood Using Remote Sensing from Smith Bay to Camden Bay (Beaufort)

Improve Understanding of Beaufort Sea Mesoscale Meteorology (surface wind and stress field to improve prediction of ocean and ice circulation)

Monitoring the Distribution of Arctic Whales (Beaufort, Chukchi)

Arctic Fish Ecology and Behavioral Information Catalogue (Beaufort, Chukchi)

Pinniped Movements and Foraging (Chukchi)

North Pacific Right Whales in the Southeastern Bering Sea: Distribution, Abundance, and Habitat Use (Bering Sea)

Continuation of Impact Assessment for Cross Island Whaling Activities - Beaufort Sea (Beaufort)

COMIDA: Distribution and Relative Abundance of Marine Mammals: Aerial Surveys (Chukchi)

Chukchi Sea Offshore Monitoring in Drilling Area (COMIDA): Chemical and Benthos (Chukchi)

COMIDA: Impact Monitoring for Offshore Subsistence Hunting (Chukchi)

Pinniped Movements and Foraging: Walrus Habitat Use in the Potential Drilling Area (Chukchi)

Migration and Habitat Use by Threatened Spectacled Eiders in the Eastern Chukchi Near and Offshore Environment (Beaufort, Chukchi)

Mapping and Characterization of Recurring Polynyas and Landfast Ice in the Chukchi Sea (Chukchi)

Demography and Behavior of Polar Bears Summering on Shore in Alaska (BRD) (Beaufort, Chukchi)

Environmental Studies: Newly Started or Planned to Start in FY 2010

Passive Acoustic Detection and Monitoring of Endangered Whales in the Arctic (Beaufort, Chukchi)

Ecosystem Observations in the Chukchi Sea: Biophysical mooring and Climate Modeling (Chukchi)

Beaufort Sea Marine Fish Monitoring: Pilot Survey in the Central Beaufort Sea (Beaufort)

Evaluation of the Use of Hindcast Model Data for OSRA in a Period of Rapidly Changing Conditions (Workshop) (Beaufort, Chukchi, North Aleutian Basin)

Joint Funding Opportunities in Existing Marine Fish Studies (Beaufort, Chukchi)

Seabird Distribution and Abundance in the Chukchi and North Aleutian Basin Offshore Environment (Chukchi, North Aleutian Basin)

Alaska State-Wide Oceans Research and Studies Project Browser Covering the Alaska Offshore and Coastal Areas (Beaufort, Chukchi, Bering)

Potential Studies that MAY be Proposed for FY 2011 NSL

Updates to the Fault Tree for Oil-Spill Occurrence Estimators needed under the forthcoming MMS 2012-2017, 5-Year Program (Beaufort, Chukchi, Hope Basin, Norton Basin)

Hanna Shoal Ecosystem Study (Chukchi)

Marine Mammal/Physical Oceanography Synthesis (Beaufort, Chukchi)

Monitoring the Distribution of Arctic Whales (COMIDA/BWASP Extension) (Beaufort, Chukchi)

Distribution of Fish, Crab and Lower Trophic Communities in the Chukchi Sea Lease Area (Chukchi)

Onshore Effects of Offshore Oil Development: Oil Spill Occurrence Estimators for Onshore Alaska and Canada North Slope Crude and Refined Oil Spills (Beaufort, Chukchi)

ANIMIDA III: Contaminants, Sources, and Bioaccumulation (Beaufort)

Potential Studies that MAY be Proposed for FY 2012 NSL

Impact Assessment for Kaktovik Whaling Activities (Beaufort)

Cape Lisburne Seabird Colony Productivity and Foraging Areas (Chukchi)

Eastern Beaufort Sea Marine Fish and Lower Trophic Survey (Beaufort)

Physical Oceanography of the Chukchi Sea Oil and Gas Lease Areas (Chukchi)

Field Evaluation of an Unmanned Aircraft System (UAS) for Studying Cetacean Distribution, Density, and Habitat Use in the Arctic (Beaufort, Chukchi)

Baseline Nutritional Survey: Inventory and Content Analysis of Subsistence and Market Foods as Consumed by North Slope Communities (Beaufort, Chukchi)

Enclave Development: A Reassessment of Models for Housing Transient Workers in Rural Alaska (Chukchi)